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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,565	07/10/2002	Christian Boehnke	HHI-039US	6867
959	7590	01/08/2004	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			LIN, KUANG Y	
			ART UNIT	PAPER NUMBER
			1725	

DATE MAILED: 01/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,565	BOEHNKE, CHRISTIAN	
	Examiner	Art Unit	
	Kuang Y. Lin	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The meaning of last two lines of claim 1 is not clear. Also, it is not clear what the "sprue point" is.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Lester.

The scope of the claims reads on the prior art apparatus. In Lester, the tip of the reaction plunger 15 moves into the mold, which consists of mold parts 10 and 11, during casting process. The entire article formed from the entire solidified molten metal is cast article. Thus, the tip of the reaction plunger is one of the two walls that is movable into the mold and is configured to partially determine surface shape of the casting, i.e. the molded article 12.

3. Claims 1-2 are also rejected under 35 U.S.C. 102(b) as being anticipated by Chadwick.

The figures 7 and 8 of Chadwick appears to show the invention as claimed. In those figures the inner cylinder 6a is capable of extending into the chamber 5 to form a metering cavity.

Art Unit: 1725

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1-2, assuming that the part of the casting of Lester formed in the space between the wall of plunger 15 in position E and the wall of plunger 17 in the position A is not considered to be a casting, is also rejected under 35 U.S.C. 103(a) as being unpatentable over Lester and further in view of GB 2,129,343 or Chadwick and vice versa.

Lester shows to deliver molten metal through moving two opposed pistons in the injection cylinder. The apparatus of Lester is capable of providing various volume of molten metal needed for different castings. GB '343 and Chadwick, respectively, show to use one of the two opposed pistons to define a part of mold cavity such that to eliminate the use of sprue and thereby the trimming step for removing portions of the casting formed by the gate and sprue is not required and thus simplify the die casting process and reduce the cost. It would have been obvious to use one of piston to define the mold cavity as taught by GB '343 or Chadwick in the apparatus of Lester in view of the advantage. It would also obvious to use the two opposed pistons movable within the chamber of injection cylinder for varying the volume of the molten metal for casting different size of

castings as taught by Lester in the apparatus of GB '343 or Chadwick in view of the advantage.

6. Applicant's arguments filed October 27, 2003 have been fully considered but they are not persuasive.

a. In page 3 of the remarks, applicant stated that in Lester "the metering cavity 20 does not appear to extend to the mold cavity 16. However, it is apparent that the metering cavity 20 must extend to the mold cavity 16 such that the molten metal can be injection into the mold cavity to form a cast article.

b. In page 5 of the remarks applicant requested the translation of CH '661. The rejection now is based on GB '343 which is a English equivalent of CH '661.

c. In page 5 of the remarks, applicant stated that the examiner failed to give any reason regarding the detail advantage of simplifying the design. Since as the sprue is not required, the trimming step for removing portions of the casting formed by the gate and sprue is not required and thus simplify the die casting process and reduce the cost.

d. In page 6 of the remarks, applicant stated that there is no advantage of modifying the CH '661 to use the plungers of Lester for varying the volume. However, as stated in the last office action, the advantage of modifying the apparatus of CH '661 by using the plungers of Lester has the advantage of casting different size of cast article, which requires different volume of molten metal, without changing the plungers as a different die is replaced and thus simply the die design.

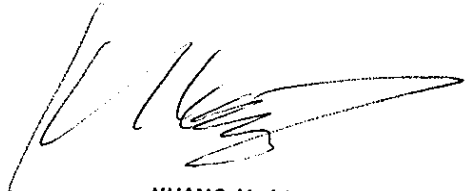
Art Unit: 1725

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 703-308-2322. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas X Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

December 22, 2003



KUANG Y. LIN
EXAMINER
GROUP 320
1725